

App# 09/878,338

HTTP/1.1 200 OK  
Date: Mon, 08 Apr 2002 22:33:07 GMT  
Server: Apache/1.3.20 (Unix)  
Last-Modified: Wed, 19 May 1999 11:06:00 GMT  
ETag: "2e7d04-3bf7-37429b18"  
Accept-Ranges: bytes  
Content-Length: 15351  
Connection: close  
Content-Type: text/plain

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Nokia  
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**URLs for GSM Short Message Service**  
**<draft-antti-gsm-sms-url-04.txt>**

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**Abstract**

This document specifies a URL (Uniform Resource Locator) scheme "sms" for specifying a recipient for an alphanumeric message (Short Message) in a GSM-based mobile phone system. Short Messages are two-way paging messages that can be sent from a suitably equipped computer or a phone.

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## 1. Introduction

### 1.1 What is GSM?

GSM (Global System for Mobile Communications) is a digital mobile phone standard which is used extensively in many parts of the world. Named after its frequency band around 900 MHz, GSM-900 has provided the basis for several other networks utilizing GSM technology. When referring to "GSM" in this document, we mean any of these GSM-based networks that operate a short message service.

### 1.2 Short Message Service

Short Messages [SMS] are two-way alphanumeric paging messages that can be sent to and from GSM mobile phones. Short Messages can be transmitted over the mobile phone's air interface using the signalling channels so there is no delay for call setup. Short Messages are stored by an entity called Short Message Service Centre (SMSC) and sent to the recipient when the subscriber connects to the network. The number of a cooperative SMSC must be known to the sender when sending the message.

Short Messages can be mobile terminated (MT) or mobile originated (MO). Mobile terminated messages are the ones that arrive to phones; mobile originating messages are sent by a mobile subscriber. Networks may support either, both or none of these.

A service similar to GSM SMS can be found also in other mobile phone systems, but it may be called something else. The sender may not be able to know whether it is capable of successfully sending a Short Message to the recipient. The success depends on whether the network operators have a suitable roaming agreement and a mechanism to deliver the messages (theoretically it is possible to deliver short messages between different network types, but this is not common at the moment). It should be the network operator's responsibility to inform the user about a success or a failure of the message delivery.

If there is a need to use the same scheme specifier for other network types than GSM, this document should be updated.

### 1.3 Short Messages and the Internet

Short Messages can be used to transport almost any kind of data. Some examples of possible uses for a Short Message are described below.

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The Hypertext Markup Language (HTML) provides a way to collect information from the user and pass it to a remote server for

processing. This functionality is known as "forms". A filled-in form is usually sent to the destination using Hypertext Transfer Protocol (HTTP) or mail. Short Messages can be used as the transport for these forms. As the Short Message service is "out-of-band" as far as normal HTTP-over-TCP/IP is concerned, this provides a way to fill in forms offline and send the data without making a TCP connection to the remote server, as the set-up time, cost and overhead for a TCP connection are large compared to a Short Message. Also, depending on the network configuration, the sender's telephone number may be included in the Short Message, thus providing a weak form of authentication.

Short Messages can also provide an alternative to a "mailto" type URL. When a "sms" type URL is activated, the user agent MAY start a program for sending an SMS message, just as "mailto" may open a mail client.

The recipient need not to be a mobile phone. It can be a server that can process Short Messages, either by gatewaying them to another messaging system or by parsing them for supplementary services.

GSM Short Messages have a maximum length of 160 characters (from the SMS character set), or 140 octets. However, Short Messages can be concatenated to form longer messages. It is up to the user agent to decide whether to limit the length of the message and how to indicate this limit in its user interface, if necessary. There is one exception to this, see section 2.5.

1.4 Formal Definitions

Definitions are written using Augmented BNF for Syntax Specifications [RFC2234].

1.5 Requirements

Compliant software MUST follow this specification. Requirements are indicated by capitalized words as specified in [RFC2119].

2. The "sms" URL Scheme

2.1 Applicability

This URL scheme is intended for sending a Short Message to a certain recipient(s) through service centre(s). The functionality is quite

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similar to that of the "mailto" URL, which (as per [RFC2368]) can also be used with a comma-separated list of email addresses.

In some situations, it may be necessary to guide the sender to send the Short Message via a certain SMSC. For this purpose, this URL may specify the number of the SMSC.

The notation for phone numbers is similar to that if [DRAFT-TELURL]. Refer to that document and to [RFC2303] for information on why this

.. particular format was chosen.

- : How the Short Message is sent to the SMSC is outside the scope of
- this specification. Short Messages can be sent over the GSM air interface or by using a modem and a suitable protocol (such as UCP [UCP] or TDP [TDP]). Also, Short Message service options like deferred delivery and delivery notification requests are not in the scope of this document. Such services MAY be requested from the network by the user agent if necessary.

Short Messages sent as a result of this URL MUST be sent as class 1 Short Messages, if the user agent is able to specify the message class.

## 2.2 Formal Definition

The URL is case-insensitive. The URL syntax is formally described as follows:

```

sms-url           = scheme ":" scheme-specific-part
scheme            = "sms"
scheme-specific-part = subscriber-id [";via=" message-centre-id]
                    [", " scheme-specific-part]
subscriber-id     = ["+"] phone-number
message-centre-id = ["+"] phone-number
phone-number      = 1*phonedigit
phonedigit        = digit / "-" / "."
digit             = "0" / "1" / "2" / "3" / "4" / "5" /
                    "6" / "7" / "8" / "9"

```

## 2.3 Parsing a "sms" URL

1. <subscriber-id> is extracted. It is the phone number of the final recipient and it MUST be written in international form with country code, unless the number only works from inside a certain geographical area or a network. Note that some numbers may work from several networks but not from the whole world - these SHOULD be written in

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international form. All international numbers MUST begin with a "+" character. Hyphens and dots are only to aid readability. They MUST NOT have any other meaning.

2. <message-centre-id> is extracted if present. User-agent SHOULD try to send the message first using this SMSC. If that fails, user-agent MAY try another SMSC. The number of the SMSC is subject to the same rules as the "subscriber-id" (see above).

3. If the URL consists of a comma-separated list of recipients, all of them are processed in this manner. Exactly the same content SHOULD be sent to all of the listed recipients.

## 2.4 Examples of Use

```
sms:+3585551234567
```

This indicates a mobile terminated (MT) Short Message capable recipient at the given telephone number. The message is sent using the user-agent's default SMSC.

sms:+3585551234567;via=+3585551000100

This indicates that the Short Message should be sent using the SMSC at the given number.

## 2.5 Using "sms" URLs in HTML Forms

When using a "sms" type URL as an action URL for HTML form submission [RFC1866], the form contents MUST be packaged in the Short Message just as they are packaged when using a "mailto" URL [RFC2368], using "application/x-www-form-urlencoded" MIME type [RFC1866]. The Short Message MUST NOT contain any HTTP headers, only the form data. The MIME type is implicit. It will not be transferred in the Short Message.

The user agent SHOULD inform the user about the possible security hazards involved when submitting the form.

If the form submission is longer than the maximum Short Message size, the user agent MAY either concatenate Short Messages, if it is able to do so, or it MAY refuse to send the message. The user agent MUST NOT send out partial form submissions.

## 3. References

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[RFC2368] The mailto URL Scheme. July 1998. P. Hoffman et al. RFC 2368. <URL:ftp://ftp.nordu.net/rfc/rfc2368.txt>

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<[http://www.mot.com/MIMS/MSPG/pcia\\_protocols/tdp\\_v2p0/index.html](http://www.mot.com/MIMS/MSPG/pcia_protocols/tdp_v2p0/index.html)>

[SMS] Digital Cellular Telecommunications System (Phase 2+): Technical Realization of the Short Message Service (SMS) Point-to-Point (PP) (GSM 3.40). Version 5.2.0. May 1996. European Telecommunications Standards Institute.

#### 4. Security Considerations

It should be noted that the user agent SHOULD NOT send out Short Messages without the knowledge of the user because of associated risks, which include sending masses of Short Messages to a subscriber without her consent and the costs involved in sending a Short Message.

The user agent SHOULD have some mechanism that the user can use to filter out unwanted destinations for Short Messages. The user agent

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SHOULD also have some means of restricting the number of Short Messages sent.

#### 5. Authors' Addresses

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Please include your name and electronic mail address in all communications. If you want to receive the newest version of this specification electronically, send mail to the address above.

This document expires on the 24th of November, 1999, or when a new version is released.

#### 6. Full Copyright Statement

To be included in the final RFC submission.

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